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"No Accurate Indication"

The managements of foundry concerns, which have converted the solid-fuel fired furnace to oil-burning, must feel very disquieted after reading the debate in the House last week. Many installations were made following pressure from the Government, and a full technique for their economic exploitation has been developed. Now they are informed by the Minister "that it is not possible to give any accurate indication of the future of oil conversion." Oil was always a popular fuel with the non-ferrous foundry owner, and in pre-war days his sole objection was that price fluctuations were occasionally disturbing. Yet he could make long-term contracts, and he always was really appreciative of the excellent technical services which were freely given by the more prominent fuel oil suppliers. Now, owing apparently to the dollar shortage, a foundry owner may be forced—at his own expense—to revert to the use of solid fuel. This commodity is also in short supply, as increasing allocations have to be made to the export market, to pay for, *inter alia*, the import of oil. The latter arrangement we believe to be good business.

The conversions to oil have been made on a very large scale. No fewer than 1,548 plants have been changed over, whilst a further 291 had been sanctioned, plus 120 proposed to be sanctioned, plus 435 cases under examination. If we read the statement made by the Parliamentary Secretary to the Ministry of Fuel and Power correctly, the current consumption of oil for industrial purposes is of the order of four million tons a year. How much of this has to be paid for in dollars is not stated.

Of this huge quantity, the foundry takes a not inconsiderable share, for a movement towards the increased use of fuel oil began well before the war. Increased employment of oil as a fuel would no doubt have taken place naturally and orderly, but the panic pressure brought about by Government interference is now in turn bringing about a measure of chaos. When writing of the Government's notions to mitigate the shortage of solid fuel, we pointed out that conversions of furnaces from the use of one type of fuel to another was not easy. Reconversion is still more difficult. Each type of fuel requires a different hearth form and space for the proper functioning of the flame for efficient working.

The worry of the present situation is that statistically it is appalling, and the foundry being "basic" to so many other industries, they, too, may be impeded in their export drive. For instance, there are only three concerns capable of making a certain type of casting as a cardinal feature in marine engineering, and at least two of these firms have to a major extent converted their furnaces to oil firing. Stoppage or severe restriction in the supply of fuel oil would completely disorganise Britain's shipbuilding programme. Fuel oil, at the behest of the Government, has become a major raw material of the foundry industry and it is incumbent upon the sponsors of this fact to ensure continuity of output by maintaining adequate supplies. If State planning is to be removed from the level of *opéra bouffe*, it must be associated with something approaching an "accurate indication," otherwise what little confidence is now placed in Government schemes for the future welfare of the country will be dispersed. The leaders of our industry must press for a rational statement from the Ministry in order that they may conduct their manufacturing on a realistic foundation. Risks have to be taken by those responsible for the conduct of manufacturing concerns, but it has not been usual in the past to include Government advice in the category of a bad let-down.

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Forthcoming Events

(Secretaries are invited to send in notices of meetings, etc., for inclusion in this column.)

MAY 22.

Institution of Production Engineers.

Wolverhampton Section:—Full-day Conference on "Production per Man Hour," at the Wolverhampton and Staffordshire Technical College, Wolverhampton, commencing at 10 a.m.

MAY 26.

North-Western Fuel Luncheon Club.

"The Exploration for Oil in Great Britain," by Dr. G. M. Lees, M.C., D.F.C., J.P., at the Engineers' Club, Albert Square, Manchester, at 12 noon for 12.45 p.m.

Manchester Association of Engineers.

Visit to rod-rolling and wire mills of the Whitecross Company, Limited, Warrington. Members to assemble at the works at 2.15 p.m. Special 'bus meets the 1.30 p.m. train from Manchester (Central) to Warrington (Central).

Institute of British Foundrymen.

London Branch:—Visit to the works of R. & A. Main, Limited, Gothic Works, Angel Road, Edmonton, N.18. Members to assemble at the main works' gate (Angel Road) at 2.30 p.m. Admission by ticket, to be obtained from the Secretary before noon on Monday, May 24.

Chemical Engineering Group.

Annual General Meeting at 12 noon at the Waldorf Hotel, Aldwych, London, W.C.2.

MAY 26, 27, 28.

Institute of Vitreous Enamellers.

Spring Meeting, with headquarters at the Grand Hotel, Bournemouth. Papers:—"The Nature and Preparation of a Clean Surface," by Dr. T. P. Hoar; "Modern Methods of Metal Preparation for Subsequent Vitreous Enamelling," by H. Silman; and "The Development of Defects in the Vitreous Enamel Surface" (with colour film), by Dr. A. I. Andrews (presented by S. Vickery). Additionally there will be a "Question-Box" discussion, a works visit to C. O. A. Products, Southampton, and a full programme of social events.

MAY 27.

Institution of Production Engineers.

Shrewsbury Sub-section:—"Powder Metallurgy," lecture by H. Greenwood.

"Non-Destructive Methods of Testing" and "Core Oils"

Two conferences are planned by the British Iron and Steel Research Association for next autumn. They are to be held at Ashorne Hill, near Leamington. The first has the support of the Institute of Physics, and on September 8 and 9 is to discuss non-destructive testing of castings.

There will be Papers on X- and Gamma-ray methods and on X-ray equipment, radioactive materials and radiography abroad. Magnetic and ultrasonic methods will be covered and finally there will be a Paper on recent work by B.I.S.R.A.'s Non-destructive Testing Subcommittee on the comparison of X-ray, Gamma-ray and ultrasonic methods and a Paper on acceptance standards.

The second conference is planned for October 21 and 22, and is to discuss foundry core-bonding agents. The object is to bring to the notice of founders the wealth of information that has been obtained in recent years on the new materials that may be used for the bonding of foundry cores. The use of such materials, in many cases with an appreciable reduction in cost, would enable the linseed oil, used hitherto, to be diverted to alleviate the shortage of edible fats.

(*Concluded at foot of column* 2.)

In Session 1, Papers will be presented on the natural resources of the materials, recent work by the Association on the practical and fundamental aspects of bonding, and the properties of new materials such as plastics and petroleum products. In Session 2, Papers will be presented on the experience of founders with such materials, and in Session 3 the impact of these materials on matters such as core blowing, dielectric and infrared heating will be considered.

British Standard Schedule of Copper Alloy Ingots and Castings

B.S. No. 1400 : 1948

The British Standards Institution has recently published the British Standards Schedule 1400:1948 of copper alloy ingots and castings. This schedule brings together in one volume all current British Standards for copper alloy ingots and castings. The range of existing standards has been carefully reviewed, and a number of amendments have been made to bring the specification requirements into line with current practice. There is also a number of new alloys which have been included to make the series more complete. Among these new alloys are three brasses which replace the brasses types A and B (B.S. 1025-1028), a new high-tensile phosphor bronze included at the request of the chemical-pressure-vessel manufacturers, and three grades of high-tensile brass which supersede B.S.207/8. Furthermore, a number of standards for cast copper alloys prepared during the war for emergency purposes have become so well established that they have now been included in the general series.

The first part of the schedule contains the chemical composition limits and mechanical properties for each of the alloys, in the form both of ingots and castings. In parts 2 and 3 general clauses are given, applicable to ingots and castings respectively. A special feature of these general clauses is that they have been revised and co-ordinated to bring them into line with B.S.1367 —"Code of procedure in inspection of copper-base alloy sand castings," to which the schedule is complementary. An interesting feature of the schedule is the new system of grouping and numbering the alloys. The preparation of the schedule has provided the opportunity to introduce a more rational scheme, and it is felt that the advantages of the new scheme will far outweigh the temporary inconveniences to users of the earlier B.S. numbers. To reduce this inconvenience to a minimum, the old B.S. numbers, which are now superseded, have been given under the new references throughout part 1. Copies of the new schedule can be obtained from the Sales Department, British Standards Institution, 24, Victoria Street, London, S.W.1, price 7s. 6d., post free.

The Mechanisation of an American Malleable Foundry*

Dust suppression at the source is a feature of this modern plant

Foundrymen who face difficult labour conditions and who yet must keep costs at a minimum without sacrifice in quality, may well find much food for thought in an ultra-modern layout such as is now in operation at the malleable ironfoundry of Auto Specialties Manufacturing Company, St. Joseph, Mich. Although the building is not new and some portions of the over-all equipment were employed for steel casting production during the war, a large proportion of the equipment is entirely new, and everything considered essential for comfortable and highly efficient operation has been incorporated in the new layout.

Working Conditions

Of prime importance is the improvement in working conditions, for they spell the difference between working in dirt and discomfort as against doing the job in a clean atmosphere, free of dust and with ample ventilation. This ensures as high a degree of bodily comfort as is readily attainable in foundry work. Virtually all factors productive of dust are kept under control and, where dust cannot be prevented, it is drawn off as produced.

Fresh air is washed, cooled and fed in where needed in sufficiently large volume to maintain working atmospheres comparable to those in plants where dust is not a problem. Much of the air moved is drawn over hot moulds and castings on its way to exhaust fans and thus helps to cool castings rapidly.

With such arrangements, personnel problems are simplified, labour turnover is reduced and improved efficiency is reflected in a high output per man-hour. This output is augmented by the excellent system of handling materials. Something close to the ultimate in labour economy for charging cupolas is attained, for example, as this job is handled by three men, although about 22 tons per hour are melted.

Not only is labour reduced to a practical minimum, but, by the use of automatic controls and close technical supervision, quality is kept high and the chances of imperfect castings and of those which do not meet exacting specifications are held at a low level. Uniformity is promoted by employing a 40-ton electric furnace for duplexing metal fed by 5-ton ladles.

*Reproduced from the "Iron Age" by courtesy of the Editor.

Duplexing Furnace and Cupolas

By keeping 20 to 30 tons of metal in the electric furnace, the addition of 5 tons of cupola metal from the transfer ladle is limited in its effect on either the temperature or composition of the metal being poured. In other words, by keeping a large pool of molten metal on hand, there is ample time to make alterations to the cupola metal before the chemistry of the electric furnace metal can drift beyond the limits of satisfactory composition. It is obvious that 15-min. ladle additions of cupola metal can exert only an insignificant effect on the metal being poured. Reasons for other economies become apparent as the over-all set-up is described in some detail.

Two duplicate cupolas are used, one each alternate day consisting of two 8-hr. shifts. At the end of the second shift, the charge is dumped and the cupola is left to cool so that it can be repaired while the other is in use the following day. Cupolas are No. 9½ Whiting type, of 60-in. dia., water jacketed and arranged for Griffin hot blast. The cupolas also have Kathabar control of moisture content. In this system, hot combustible gases that otherwise would escape up the stack are used to preheat the blast. This makes, of course, for fuel economy and for faster melting, the latter being continuous. A dry dust-collector constitutes part of the hot-blast system.

With the Kathabar system, moisture content of the air is held constant throughout the year and the

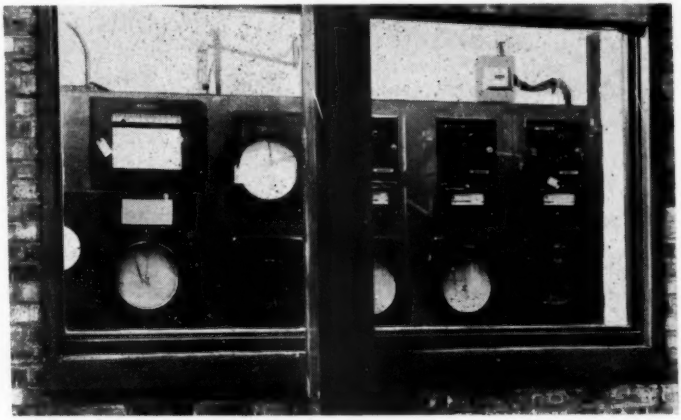


FIG. 1.—ENCLOSED PANEL OF RECORDING INSTRUMENTS.

Mechanisation of an American Foundry

volume of air fed, as well as its temperature, is held constant by automatic means. The control of moisture makes castings more responsive to the annealing treatment that gives them their malleable qualities. A set of recording instruments in a room near the cupolas (Fig. 1) provides a continuous record of significant performance factors and indicates at a glance when adjustments are required.

Charging the Furnace

Methods of preparing the charge are also noteworthy, partly because of the mechanical equipment employed to minimise labour. Incoming trucks of coke, limestone, pig and scrap are unloaded by crane and are all stored under cover. A specially processed slow-burning Southern coke is used. Coke and stone are stored in large elevated bins equipped with hydraulic gates and weigh hoppers adjacent to the iron loading platform which is served by a charging crane.

Pig-iron and scrap are stored in bins at floor level from which they are transferred by a magnet handling crane to the charge platform, as shown in Fig. 2, at the centre of which is a weigh hopper whose gate is under hydraulic control. This hopper holds a full metal charge and is surrounded by secondary make-up bins for different types of pig and scrap. From the metal compartments are assembled the charge being weighed out by the magnetic crane operator. The metal charge contains approximately 10 per cent. silvery pig, 40 per cent. scrap and 50 per cent. sprue. A coke-to-metal ratio varying between the limits of 8 and 11 to 1 is maintained.

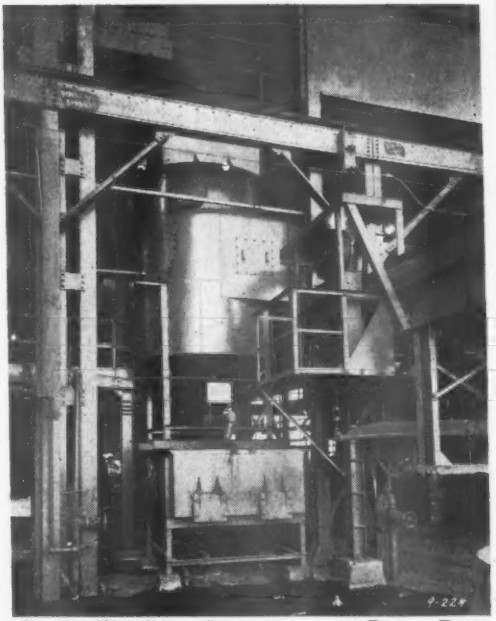


FIG. 3.—WET DUST COLLECTOR WHICH DRAWS DUST AWAY FROM THE CUPOLA CHARGING AREA.

FIG. 2.—CUPOLA CHARGING PLATFORM.
Magnet crane is shown discharging a scrap charge into a central weigh hopper. Make-up bins surround the hopper.

Total charges are made up in cone-bottom buckets set on an electric motor-driven transfer car shiftable along a track at floor level. The track runs under the charge platform and the coke and stone bins. After charges are weighed out by the crane operator in the corresponding weigh hoppers, the car operator shifts the charging bucket to receive these charges, pulls the release levers of the hydraulically-operated gates and then runs the car to a point where the loaded bucket is picked up by the charging crane, hoisted to dumping height and shifted over the cupola. Then the cone-bottom bucket is dumped, picked up again and then is lowered on to the car.

By having a cone-bottom bucket, the charge is spread evenly, next to cupola walls. As soon as weigh hoppers are discharged and their gates are closed, the magnetic-crane operator starts assembling the next charge. Thus, all charging is done by three men,

two crane operators and a transfer-car operator.

Dust Suppression

Considerable dust is released as a charge is made up and dropped from weigh hoppers, but this dust is drawn off, as produced, by a Whiting Hydro-Clone wet suppressor, shown in Fig. 3, adjacent to the loading area. The dust is wetted down just before the air is discharged outside the building. This not only keeps the charging area comparatively free of dust but prevents it from being drawn back with air used for ventilating other areas. Water used for dust wetting is discharged in a settling tank from which slurry is removed by truck as required.

Another factor tending to reduce dust formation around cupolas is the use of wet slag disposal. Slag is drawn off continuously at a front spout and runs down a water trough into a quench tank. This produces a granulated slag that is elevated by a bucket conveyor and is dumped, while still wet, for hauling away by truck. This arrangement avoids dust formation by slag. Some dust results from the cupola drop once a day at the end of the second shift, but even this is minimised by using a special drop bucket truck that is run under the cupola and in which the drop is immediately quenched.

FIG. 4.—HOT METAL FROM THE CUPOLA BEING DISCHARGED INTO A 40-TON ELECTRIC-ARC FURNACE.

Trial Use of Oxygen

Molten iron runs from the cupola in a continuous stream as soon as the new charge, laid and ignited 3 hrs. in advance of the working day, is up to temperature. Tests with oxygen applied during the warm-up period have indicated that this period could be shortened somewhat but the small time saving that results is not commensurate with costs and extra equipment involved. Conclusions indicate that no significant net benefit would be derived by using oxygen at any stage of melting, especially in view of the economies that result from the use of the hot blast.

Charging is regulated to produce a standard grade of motor vehicle malleable iron having the following nominal composition: C 2.65; Si 1,50; Mn 0.40; S 0.10 max., and P 0.055 per cent. max.

The chemistry is checked for each 5-ton ladle transferred to the duplexing furnace (Fig. 4), and charging is altered, if necessary, to compensate for any important deviation from the mean or nominal composition. As 20 to 30 tons of metal are normally held in the duplexing furnace, the addition of a 5-ton ladle of new metal, even if it is slightly off the mean composition, does not produce an important change in the composition of metal drawn from the electric furnace into the hot-metal carriers. Before the cupola metal can exert any significant over-all effect, the checks on each ladle are finished and any indicated additions or changes in the charging are quickly and accurately made.

Metal run from the cupola is not discharged directly into the transfer ladle but is run into trunnioned mixing ladles that are kept hot by oil firing and receive a desulphurising agent before tapping into the transfer ladle is done. This ladle is transferred to the electric duplexing furnace by an overhead crane.

From the spout of the latter furnace, the metal is drawn off into a hot-metal carrier on a monorail and from this is shifted into drum-type ladles from which pouring into moulds on the conveyor lines is done. Drum ladles are also on monorails and are moved by hand as needed to keep pace with the continuously moving moulds.

(*To be continued.*)

The Standardisation of Grey Iron Flasks, Flask Pins and Bushings

The Flask Standardisation Committee of the *Mekanförbundet* of Sweden has altered its 1947 proposals of standards for grey iron flasks especially regarding heights and lug design of the flasks. A proposal of design, sizes and tolerances of flask pins and bushings has been submitted. The committee recommends case hardened carbon steel in the pins which have been standardised in two sizes, 22 and 30 mm. The bushings are to be made of cast iron or bronze and driven into the lugs.

Grey Iron Castings

British Standard Specification No. 1452 (1948)

This new specification has now been passed, and is expected to be published during May. The most important feature of this specification is that it supersedes the two present specifications No. 321 Grey Iron Castings and No. 786 High Duty Iron Castings and applies a completely new nomenclature to the various grades, as follows:—

Old Standards (*now obsolete*)	New Standard
BS.321 Grade C	BS.1452 Grade 10
,, ,, A	,, ,, 12
BS.786 ,, 1	,, ,, 14
,, ,, 2	,, ,, 17
,, ,, 3	,, ,, 20
,, ,, 4	,, ,, 23
(not previously covered)	,, ,, 26

The new nomenclature is based on the minimum tensile test requirements (in tons per sq. in.) for the 1.2-in. bar for each grade, and should be much easier to memorise than the old system. The new specification corresponds in some respects to the American practice where all grades are covered by one specification and grades are numbered by the tensile requirements in thousand pounds (*e.g.*, grade 40 = 40,000 lb. per sq. in. tensile). The previous difficulty of drawing a line between "grey iron" and "high-duty iron" is also overcome and it is left to the industry to apply the latter term only to those grades of iron in the new specification which are truly "high duty" by modern standards.

Important Features

In view of this change, the wording of the foreword has been strengthened, as compared with B.S. 786, and it now states:—

"*It is emphasised further that the higher the grade of cast iron, the more expensive it becomes to produce; users should, therefore, in their own interests specify the lowest grade needed to satisfy their own particular requirements.*"

The other important new feature of this specification is the introduction of the new grade 26, which requires a minimum tensile strength of 26 tons on the 1.2-in. bar. Irons of this grade are now in regular production in many foundries and this marks a further step forward in the advance of foundry technique, the highest grade now being approximately 2½ times stronger, in tensile, than the requirements of the highest grade envisaged in the first specification published only 20 years ago. The difficulty of producing irons of this new grade 26 in very thin sections is mentioned in the foreword, with appropriate reference back to this in the body of the specification.

The main features of the original specifications have been retained, although there have been many minor alterations, which have been introduced to overcome difficulties experienced in working or interpreting the previous specifications. The most notable of these are:

(1) Reversal of order of clauses to give prominence to the tensile test instead of the transverse test.

(2) The tensile test requirements on the 1.2-in. bar have been raised by 1 ton per sq. in. on the two lowest grades, and the differential requirements between the various bars have been re-arranged to give steps of 0.5 ton per sq. in. for each bar size on the two lowest grades and 1.0 ton per sq. in. for each bar size on the others. This difference is further explained in the foreword.

(3) The screw threads for the tensile test-pieces have been revised in certain instances.

(4) The transverse tests requirements have been very considerably varied and have now been fixed on a definite ratio to tensile requirements, this being on a straight line from 2:1 for the lowest grade to 1.5:1 for the highest grade. The deflection requirements have been brought into line with these new figures, and the usual provision has been made for correction factors for bars varying from nominal size.

(5) The introduction of a clause (No. 12) pointing out that any additional test required must be stated at the time of the inquiry and order. This has been introduced so that users having special requirements such as Brinell hardness or impact tests or special composition, such as the presence of alloying elements, may ask for them, whilst still using this specification as the basis.

(6) A new clause (No. 15) which provides for the supply by the manufacturer of a test certificate in the absence of a definite statement by the purchaser that he wishes to inspect the material at the manufacturers' works.

Committees Formulating the Specification

The preparation of this new specification has been originated by the Institute's Technical Council which appointed a sub-committee, TS.16, in 1945. This sub-committee had representatives of all branches of the Institute and also the British Cast Iron Research Association. It was thus able to cover the whole range of iron castings, which is essential in the case of a general specification of this nature. For example, the experience of a producer of large marine castings is vastly different from that of a producer of light automobile castings. Thus, it is very difficult to reconcile in one specification the requirements of all, and features of the specification that appear unnecessary to one type of producer may be vital for another type.

This sub-committee drew up recommendations which were almost entirely accepted by the British Standards Institution and then further clarification of the specification was carried out by the B.S.I.'s Sub-Committee ISE.35/2, in which the Institute's representatives took a very active part. Thus the long association of the Institute of British Foundrymen with the British Standards for Iron Castings, begun by John Shaw and his colleagues, has been adequately maintained. It is earnestly hoped that the Institute members will actively support this new specification and continue the policy of working to British Standards. Copies of the new specification may be obtained from the British Standards Institution, 24-28, Victoria Street, London, S.W.1, price 2s. 6d. net, post free.

Institute of British Foundrymen

Annual General Meeting of the London Branch

The annual general meeting was held at the Waldorf Hotel, Aldwych, London, W.C.2, on April 28, Mr. E. M. Currie presiding.

Adoption of Accounts

The accounts for 1947 were presented by the Treasurer, Mr. Arnold Wilson, who, proposing their adoption, pointed out that the expenditure continued to rise and was now £173. Against this the subscription account again showed a large increase at £1,483. It was, of course, an all-time record for any branch of the Institute.

Mr. V. Delport, seconding the adoption, said he had been through the accounts and would point out that while the increase of expenditure of the branch had been 0.6 per cent., the increase of income of the branch was 16 per cent.

Annual Report

The accounts having been adopted, the annual report from the Hon. Secretary was presented by Mr. F. Arnold Wilson, who said he was pleased to report that London still held the proud position of being the largest branch in the Institute of British Foundrymen.

Membership.—Last year the then record figure of 607 members stood to-day at 638, an increase of 31, and the highest figure yet reached, and although the increase of 50 as reported at the last annual general meeting had not been reached, he pointed out that this was almost entirely due to the increased subscription which had resulted in the crossing-off number of those owing three years' subscriptions being increased this year to 32. This, in fact, meant that there were 63 new members, but a nett increase of only 31.

Honours.—Members were all extremely proud of the fact that Mr. R. B. Templeton, a past-President of this branch, was President-designate of the Institute, and it was most fitting that his term of office starts with the Annual Conference in London. Mr. V. C. Faulkner, a past-President, had been elected President of the International Committee of Foundry Technical Associations, and Dr. A. B. Everest was last year made the recipient of the Oliver Stubbs medal.

Branch-President.—There had been a first-class session with over 100 members and visitors present at every meeting but one, and he felt that the man responsible for this great achievement was the President, whose drive and enthusiasm had been an inspiration to everybody. The results of his efforts which were obvious to all must be a source of great pride to him, and he suggested that the greeting to him to-day was "Congratulations—well done."

The Year's Work.—This really started with a visit to Belgium where the *Association Technique de Fonderiè de Belgique* gave the visitors a magnificent welcome, and they had a most interesting six days at Brussels and Liège. A number of Belgian friends were coming over to the Annual Conference of the Institute in June, and everybody would be delighted to see them. The President gave an inspiring presidential address on September 24, and this was followed by Mr. J. Boyd Blakeborough's film on core-blowing entitled "Sandstorm Secrets." On October 15 there was a works visit to the British Bath Company, Limited, at Greenford, which went off very well. On October 29 Mr. Templeton, President-designate of the Institute, gave his Paper and film on "The Production of Cast Crankshafts." Mr. Coates, of Ransomes & Rapier, Limited, on November 26 presented his Paper, lantern slides and film on "Foundry Conditions, Personnel and Production," which promoted probably the best discussion of the session. The branch was host on December 11 to the Institute of Metals, when Mr. George Skript, of Langley Alloys, gave a Paper on "Mechanisation of Non-ferrous Foundries" to the joint meeting.

Later in December there was the first post-war social function at which ladies could take part, namely, a buffet dance and cabaret, when 150 attended, and the Secretary of the Institute, Mr. Tom Makemson, was the principal guest in the absence, on account of illness, of the President of the Institute, Mr. P. H. Wilson. The January meeting was devoted to a paper and technicolour film on "Precision Casting of High Melting Point Alloys containing Nickel," presented by Mr. H. Evans of the Mond Nickel Company, Limited.

February's meeting was Dr. Everest's paper and slides on "Specification and Testing of Cast Iron," which stressed the tremendous amount the Institute owed to Dr. Everest for all the work he does on various subcommittees of the Technical Council. On March 31 Mr. W. A. Turner presented his joint paper with Mr. Jeffrey on "Production Planning for the Foundry." This promoted a lengthy discussion and was well received. The President of the Institute, Mr. P. H. Wilson, honoured the branch with an official visit to this meeting, and members were much encouraged by his heartening remarks.

Branch Sections.—As regards the two Sections at Ipswich and Slough, the East Anglian Section had a most successful session, and thanks were due to their section President, Mr. R. F. Coates, and Mr. A. N. Sumner, their Hon. Secretary, who were doing an excellent job. The Slough section was again making headway, and to Mr. Michael and Mr. Raybould were also due thanks for their good work there.

General.—The attendance at Branch Council meetings has been very good, particularly by the past-Presidents

London Branch Annual General Meeting

of the Branch, who were a tower of strength. The attendance of delegates to General Council had also excellent. The first Programme Committee meeting for next session will be held in July, and the Council would like to see far more papers offered by Branch members. Particulars of any papers available should be sent along immediately.

Finally, he expressed the thanks of all of the members to Mr. Frank Hudson, who represented the Branch on the Technical Council; to Mr. Harwood Brown and Mr. George Pierce, who have looked after the register all the session; and to Mr. Ellis, whose skill with the lantern was something to be envied.

Mr. V. C. Faulkner, proposing the adoption of the Hon. Secretary's Report, said he thought they could congratulate themselves on an excellent report. Mr. Arnold Wilson had undoubtedly set a very high standard for them to follow, and as one who had seen the ups and downs of the Branch—though it had been more "up" than "down"—it behoved them to look to the future. Affairs were, he thought, satisfactory for the immediate future, but they must reinforce Mr. Wilson's efforts by personal assistance to him wherever they could.

Mr. D. C. Patterson seconded, and the report was unanimously adopted.

Election of Officers for 1948-49.—The following officers were elected:—

As President.—Mr. P. D. Pincott.

As Senior Vice-President.—Mr. F. Arnold Wilson.

As Junior Vice-President.—Mr. F. E. Tibbenham.

As Hon. Secretary and Treasurer.—Mr. F. Arnold Wilson.

As Assistant Secretary.—Mr. W. G. Mochrie.

As Hon. Auditors.—Mr. V. Delport and Mr. Chas. Cleaver.

As members of Council.—Mr. D. Graham Bissett, Mr. F. Hudson, Mr. W. F. Seivewright, Mr. A. C. Turner and Mr. D. C. Patterson.

As Representatives to the General Council.—Mr. Barrington Hooper, C.B.E., Mr. C. H. Kain, Mr. V. Delport, Mr. G. R. Webster, Mr. W. G. Mochrie and Mr. E. M. Currie.

As Representative on Technical Council.—Mr. F. Hudson.

MR. CURRIE, the Branch-President, said that now the election of officers for the next session was concluded, he would like to take up a short time to refer to the other officers who all too often went unnoticed and unsung. They had had, during the past year, two stewards who had been looking after their comfort and convenience during the meetings, and he asked as a special favour that they be given a particularly warm vote of thanks for the work they had done. It had not been easy, looking after the comfort of the large attendances they had been having, and he did not think anyone had had to complain about their comfort. He referred to the work of Mr. Harwood Brown and Mr. G. C. Pierce. He also took the apportunity to thank the projectionist, Mr. Ellis. (Applause.)

The job of President at that stage was, he said, quite a happy one because, apart from the obvious reasons, he would soon be shedding the cares of office and putting them on his friends. That did give him the opportunity of expressing his appreciation and thanks to a number of people who had given help to the President. He thought it would also be a nice gesture if they would join with him in giving thanks to their reporters and the Editor of the FOUNDRY TRADE JOURNAL. Publicity was always helpful and never harmful, and the type that they got from Mr. Faulkner and his staff had always been of a high order. (Applause.)

Finally, there had been quite a lot of thanks given to the secretary, Mr. Arnold Wilson. He would like to add his own appreciation of the work he had done during the year. He said that he appreciated that in their secretary they had a man who did things in the right way.

He also acknowledged the support he had received from the Branch Council members. They had had many good suggestions during the year—suggestions and keen interest—from every member of the Council, which had done a lot, he thought, to make the session at least a memorable one—a memorable one to him—and he hoped members would show their appreciation of the secretary and Council for the work they had done in helping him carry on during his year of office. (Applause.)

Vote of Thanks to the President

MR. R. B. TEMPLETON said there had been a lot of very nice things said and a lot of back-slapping, but the only thing which had not been done so far was to give the President a word of praise. He had passed all the praise on to his various satellites, and he quite agreed it was a nice and desirable thing to do, but, after all, the President was the figure-head of the Branch, and the President it was who had done all the work.

He remembered, when he was President, they used to have an attendance of 30 or 40 members. If they looked round that meeting, they would see there were well over 100 present. That reflected the greatest credit on the President for all he had done to inspire and further the Branch in every way. He could only add that, if he himself did just half as well as National President as Mr. Currie had done in his year of office, he would be well satisfied.

MR. BROWN said he would like to take that opportunity from the body of the hall of thanking Mr. Currie for all he had done for them during the year.

The London Conference

Mr. Kain, asked by the Chairman to give some details of the Branch participation in the annual conference of the Institute, to be held in London in June, said it was rather a task for him as he was the Hon. Treasurer of the London Conference, and members had all received an appeal for funds.

A notice from the General Office stating the Conference would be held from June 8 to 11 in London, had been circulated, and the Chairman, especially after the opening meeting, would be their friend Mr. R. B. Templeton. They hoped everyone would turn up and

support him. As to the Conference itself, it started at 9.30 on the Wednesday morning, and it was hoped that as many as possible would turn up to see Mr. Templeton inducted to the Presidential Chair. After, there was to be the Edward Williams Lecture, which was rapidly becoming an internationally-important occasion. This year it would be on a rather specialist subject, "Blackheart Malleable," by Dr. Schwartz, who was the outstanding international authority on the subject. In the afternoon there were technical sessions, and in the evening there was the "show piece" of the Conference, their annual dinner, when they hoped to have a big crowd present.

Thursday morning would be devoted to technical sessions with works visits in the afternoon. The evening would be free. Friday would be devoted wholly to works visits, and there were still a number of vacancies. Those who were in London, or near London, should, he thought, try to join in the outlying visits because the journey would not be so much of a hardship to them as to people who were coming to London and wanted to stay there.

On the Friday evening there would be a supper-dance and cabaret, after which the Conference would finish.

Recalling his opening remarks when he had said he was treasurer, Mr. Kain said it was necessary for them to raise a fund to entertain and provide transport and a considerable number of incidental expenses that were not covered in the registration fee or the nominal charges made for the members. It was quite expensive entertaining important visitors in London to-day. He had sent out an appeal and had had a number of replies, but not as many as he had hoped. At the moment they had received just over £500, but he did not think it was quite enough. Subscriptions had ranged from 5s. to 50 guineas, so the field was very wide. He thought the floor members of the Branch should try and spring a guinea or two to help, for it was important that they should entertain properly in London because, viewed from overseas, any such event in London was regarded as a national affair and one felt that the prestige of the flag was at stake.

The Secretary, MR. ARNOLD WILSON, supported Mr. Kain's appeal and said there was also a need for stewards. There would be a lot of people coming from the provinces for the Conference and they would require to be shepherded to a certain extent on the works visits, the technical sessions and in the evening as far as the banquet was concerned. He hoped there would be no shortage of stewards.

This concluded the annual general meeting.

Foundries in the U.S.A.

Following the annual general meeting, a lecture was given by Mr. F. E. Tibbenham of the Suffolk Ironfoundry (1920), Limited, on "Foundries in the U.S.A." Mr. Tibbenham was one of the official party from the Institute of British Foundrymen who attended the International Foundry Convention in the United States of America in 1946.

The lecture was illustrated with many lantern slides.

At the conclusion of the lecture the CHAIRMAN said he was sorry, but they were running well on to time. They had taken a long time over the annual general meeting. From what they had seen and the knowledge that Mr. Tibbenham still had some slides he could show them, he thought it might well be a proposal to the new Branch-President that they invite Mr. Tibbenham to finish his lecture next session. They could then ask him all the questions he knew they wanted to ask.

MR. C. H. KAIN said he was glad to be able to propose a hearty vote of thanks to Mr. Tibbenham. What Mr. Tibbenham had seen, he thought, was what all desired to see and, looking at the slides and listening to the remarks, one could not but feel that the progress which was found in American foundries was largely due to the largeness of their organisations.

Seconding the vote, MR. SEIVEWRIGHT said he would like to make a comment. He had been reading a book on the modern U.S.A. and in it had found a statement to the effect that 40 per cent. of Americans had no indoor sanitation. So they perhaps were not so progressive as they had been led to believe. He congratulated Mr. Tibbenham on being remarkably observant. His was a quick visit and he did not seem to have missed much while there. He had been interested in his remarks on doubled production, but one thing he would like to know was what was their percentage of defectives. They certainly produced plenty, but how much was of good castings? In that connection he would repeat a comment made by an American foundryman on the subject of defectives. He said: "The trouble with our castings is that our sand is too much like the Christmas pudding made according to the family recipe." That might give them a clue to the answer to the question.

The proposition was carried unanimously by acclamation.

Before closing the meeting the chairman called on the secretary, who reminded members that, if they referred to their programmes, they would see that a works visit was arranged. They would shortly be receiving a circular concerning the visit, and he hoped they would reply as promptly as possible so that their hosts could make adequate arrangements.

DR. H. A. SCHWARTZ, who is the author of this year's Edward Williams Lecture, to be presented to the Annual Conference of the Institute of British Foundrymen in June, is not attending in person owing to the unsettled conditions in Europe.

SOME 35 PROMINENT industrial engineers and National Coal Board officials from the Tyneside area were the guests of Hadfields, Limited, East Hecla Works, Sheffield, on May 12. Received by Mr. A. Roebuck and Mr. H. Humphries, directors of the company, the party made a tour of the works, and were especially interested in highly developed techniques followed in the production of steel castings.

Notes from the Branches

Birmingham, Coventry and West Midlands

A membership of 518, showing a net gain of twenty compared with the previous year, was reported at the annual meeting of this branch, held on April 28 at the James Watt Memorial Institute, Birmingham. Mr. A. J. Shore, (Acting Hon. Secretary), mentioned that a further thirty applications for membership were dealt with at the last meeting of the Branch Council. This, he thought, was a record. At the five ordinary meetings of the Branch during the session the attendance averaged 73. The annual dance, held at Wolverhampton, brought together a company numbering 158, which, in view of petrol restrictions and other difficulties, was considered satisfactory. Profit on the enterprise was 1s. 4d.! On this occasion Mr. A. A. Timmins was presented with a stainless-steel tea-set on a tray suitably inscribed, together with a cheque, in recognition of his services as Hon. Secretary. The Branch Council had met on seven occasions. The Students' Section was active during the year. Mr. Shore also referred to the connection of the Branch with the West Midland Foundry Advisory Committee (Recruitment and Training), which he said was doing good work. Members, he added, would hear with regret of the death of Mr. F. J. Cook, whom he described as a father of the Branch. The Branch was well represented at the funeral and sent a wreath. He said that the Branch had its share of honours this year, and mentioned that Mr. Sheehan had been nominated for election as Vice-President of the Institute, Mr. L. W. Bolton to receive the Oliver Stubbs medal, and Mr. J. G. Pearce to receive the E. J. Fox medal. All three were past Presidents of the Branch. Receipts of the Branch for the year were £146 17s. 6d., and payments £139 19s. 2d., leaving a credit balance of £6 18s. 4d.

For Branch President, the name of Mr. J. Hird was submitted by Mr. A. G. Harrison, who retired from that office.

Mr. D. H. Wood, who seconded the proposition, said Mr. Hird was the son of a very well-known foundryman, and was familiar with all branches of the industry. The motion was heartily endorsed.

Other officers were appointed as follows:—

As *Senior Vice-President*: Mr. H. G. Hall; as *Junior Vice-President*: Dr. H. T. Angus; as *Hon. Secretary*: Mr. E. R. Dunning.

Seven vacancies on the Branch Council were filled by the appointment of Mr. W. H. Bamford, Mr. J. H. Dolphin, Mr. E. Hunter, Mr. A. E. Lester, Mr. T. H. Taft, Mr. T. R. Twigger, and Mr. R. T. Wood. Mr. Gameson, Mr. Hall, Mr. Gale, Mr. Wright, and Dr. Angus were elected delegates to the General Council. Mr. G. R. Shotton was reappointed the representative of the Branch on the Technical Council. Mr. Roe and Mr. Lester were asked to continue to serve as Hon. Auditors.

After Mr. Shotton had reported on the work of the Technical Council, thanks were accorded to the retiring officers, and special mention was made of the service rendered by Mr. Shore in carrying out the acting secretarial duties.

Newcastle and District

The Annual General Meeting was held in the Neville Hall, Newcastle-upon-Tyne, on April 10. The report for the 1947-48 session was presented; this showed the branch to be in a sound financial condition and to have increased the membership.

The report was adopted.

The Branch Council's recommendations for officers for the 1948-49 session was put forward and they were duly elected, *viz.*:—As *President*, Mr. S. Unsworth; as *Senior Vice-President*, Mr. H. Smith; as *Junior Vice-President*, Mr. N. Charlton. In addition, to relieve the work devolving on Mr. Lashly, an assistant secretary was appointed.

A cordial vote of thanks was passed thanking Mr. Redmayne for the excellent and genial way in which he had discharged the duties of the chair throughout the session.

A film was then shown entitled "The Production of Castings for Internal Combustion Engines" (at the works of the National Gas and Oil Engine Company, Limited, Ashton-under-Lyne.) The commentator was Mr. C. R. van der Ben, member, Lancashire Branch. Some years ago he had been a member of the Newcastle Branch and so was no stranger to the district.

Before putting on the film, he exhibited a plan of the foundry showing the lay-out, and gave details of the various operations carried on.

In explanation of the film, he said they had taken it themselves and, after the preliminary difficulties of amateurs, they had found that their percentage of successful shots was quite comparable with those of professional photographers. Their short films were primarily for circulation to their agents abroad. In the course of his commentary, Mr. van der Ben said that their castings varied from a few pounds weight for their 3-h.p. gas engine to 20 tons for their 1,200-h.p. Diesel engine.

The film was scanned with close interest and, on the conclusion of its run, in answer to questions, Mr. van der Ben said that, as had been observed, they had a substantial number of elderly working men; they held on to these men, as they were experienced and excellent workmen. There were 230 employees in the foundry. The number of apprentices was 35. Questioned as to how they managed to have such a number in view of the paucity in numbers coming forward in the Newcastle area, Mr. van der Ben said that they first showed the film in the canteen to which they invited workmen, their wives and friends, demonstrating that a foundry was not such a fearful place after all. Commenting on the Hydro-blast plant shown in the film, he agreed that they also used the shot-blast on some intricate castings.

The technical excellence of the film was highly appreciated, as was also Mr. van der Ben's informative commentary, by the hearty vote of thanks accorded him.

WE OFFER OUR congratulations to Mr. A. Stewart, a Director of M. Cockburn & Company, Limited, of Falkirk, who has just completed 60 years' continuous service with the firm.

New Swedish Metal Research Institute

New buildings to be equipped on a broad basis

*By Erik O. Lissell**

A new metal research institute was recently opened in Stockholm. The institute, which is called "*Metallografiska Institutet* (The Metallographic Institute)," is to continue the successful work of the institution bearing the same name which was founded by Professor Carl Benedicks in 1920. Until 1946 the Institute was housed in the old buildings of the College of Mining and Metallurgy of the Royal Institute of Technology. The old Institute was supported mainly by the well-known organisation the "*Jernkontoret*"—the Swedish Ironmasters' Association. As a result of this, it was engaged primarily in research problems related to iron and steel.

It had been felt for a long time that the accommodation was too crowded and not up-to-date, and in 1942 the board of directors of the Institute and the *Jernkontoret* asked the Swedish Government for a new and better building. The Government suggested that the new Institute should cover a wider field than that existing and not only deal with ferrous problems, but also with non-ferrous, and asked for a broader support from the side of industry. As a result of this, the iron and steel, non-ferrous and mechanical engineering industries got together and formed the Society of Swedish Metal Research which supports the new Metallographic Institute. As a further consequence, branches of the metal industry, which previously were not engaged in co-operative research, formed new bodies for applied and fundamental research. These research bodies directly support the new Institute.

*Chief of the Swedish Foundry Research Division.

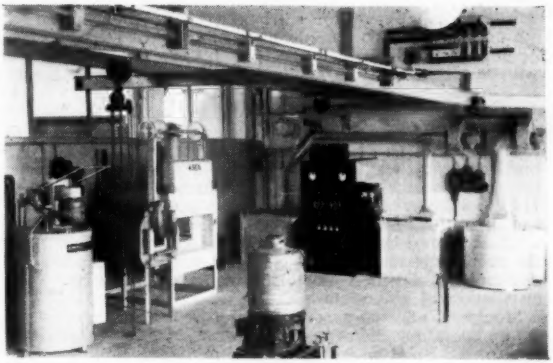


FIG. 2.—HEAT-TREATMENT LABORATORY.

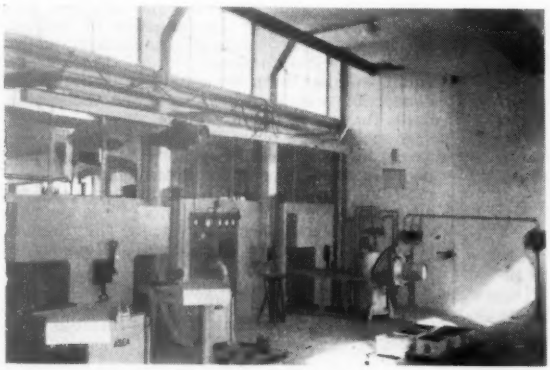


FIG. 1.—HIGH FREQUENCY FURNACES.

Buildings and Grounds

The new Metallographic Institute is beautifully situated in a park in the northern part of Stockholm. On the grounds are erected two buildings, one main building and one building for melting and heat-treating. The two buildings are connected by a tunnel. The main building houses offices, machine and carpenter shops, physical, chemical, X-ray, and metallographical as well as other service laboratories and a foundry laboratory. Not counting stairways and corridors, the building provides a floor space of about 17,500 sq. ft. The furnace building consists of one bay, roughly 18 feet high, designed for melting, moulding, casting, forging and cleaning, and one lower-ceilinged bay which contains furnaces, ovens and instruments for heat-treating, vacuum fusion and vacuum melting of small batches. Each of these two bays occupies a floor space of roughly 2,000 sq. ft. The basement of the building provides space for storage, compressor, transformers, wash-rooms and a small machine shop.

The Institute, which is not yet in full-scale operation, will, when fully equipped, house all kinds of instruments and apparatus for fundamental research in metallurgy, metallography and

New Swedish Metal Research Institute

physics. Service departments, such as shops for metal and wood working, preparation of test-bars and specimens, melting and heat-treating departments and chemical laboratories, will be equipped in an up-to-date fashion. Spectrographs, apparatus for X-ray crystallography, microscopes, instruments for determining different physical constants, equipment for creep and corrosion testing, various machines for the determination of the strength of metals, equipment for vacum fusion, *etc.*, are or will be installed in the Institute.

Melting and Casting

The laboratory for melting and casting is equipped with a 100 k.v.a. 2,220 cycles completely automatic high-frequency set, to which can be attached one 330 lb. open furnace, one 66 lb. open furnace, and one 110 lb. vacuum furnace. A section of this plant is shown in Fig. 1. The furnace building contains also a 22 in. cupola especially equipped for the study of the behaviour of the charge material in such furnaces. A couple of gas-fired crucible furnaces completes the installation of this section.

Moulding and core sand is prepared in a small sand-preparation unit, consisting of a Mullor and a core mixer. Moulds and cores are baked in a 24 k.v.a. electrically-heated oven with three individual thermostats. The shake-out and cleaning department consists of a shake-out grid, sand-blast cabinet, a grinding machine and a work bench.

Heat Treatment

The heat treatment department shown in Fig. 2 is equipped with a 35 k.v.a. salt-bath furnace and a lead pot. A 40 k.v.a. batch furnace makes treatments at high temperatures possible. The heat treatment of light metals can be carried out in a 12 k.v.a. convection furnace. Special tests at very high temperatures and under vacuum can be conducted in a pair of special resistor-type furnaces. In this department is also included equipment for the analysis of gases in metals by the vacuum-fusion method.

FIG. 3.—CORE OVEN IN THE SAND LABORATORY.

FIG. 4.—DILATOMETER OVEN IN THE SAND LABORATORY.

The Foundry Laboratory

Besides the equipment mentioned above, the foundry laboratory has access to a sand and chemical laboratory. The sand laboratory is equipped with mixers, apparatus for determination of the properties of foundry sands at room temperature as well as at elevated temperatures. Most of the equipment has been built by the laboratory in connection with the development of Swedish standards for testing foundry sands.

A special core oven, Fig. 3, which works with a very high degree of uniformity, and a high temperature oven, Fig. 4, for determining the compression strength at elevated temperatures, for heat expansion tests and for shock tests are typical of the equipment provided. The foundry laboratory, which serves the Swedish foundry industry as a central research and control station, works in close co-operation with the Metallographic Institute and utilises the service laboratories and other departments of the Institute when necessary.

THE "ZERO HOUR" for applications by members to participate in the London Conference of the Institute of British Foundrymen is May 22.

Correspondence

[We accept no responsibility for the statements made or the opinions expressed by our correspondents.]

ACCURATE BRITISH STANDARDS

To the Editor of THE FOUNDRY TRADE JOURNAL

SIR,—To an ironfounder each British Standard Specification means, solely, something which demands that a stated minimum tensile must be obtained from a testpiece of stated cast and machined diameters related arbitrarily to the wall-thickness of the casting represented. Completely at the mercy of the specification, he has to rely implicitly upon its provisions being founded wholly on incontrovertible facts. Obviously, the very essence of the specification, indeed, the very specification itself, is that portion relating wall-section to both bar-diameter and tensile. The least fault in that relation renders the specification unsubstantial. Dr. Everest, questioned on this matter, replies on page 421 of your issue of April 29th, as follows:—*All I would say at this stage is that the figures quoted in the latest Specification represent the considered view of the Committees of experts. It is admitted that the figures represent something of a compromise, but they must stand until more data are available on which to base a precise relationship.* Having had considerable experience of the witness-box, I should be happy, in view of what Dr. Everest has stated, to act for any foundry having its castings rejected by reason of their testbars failing to reach the minimum tensile given for the bar-size against the section-thickness concerned. I trust, however, that these important and vital matters will either be put dead right or else cut right out. The idea that *they must stand until more data are available* is to imperil the repute which a British Standard must continue to possesss not only here but also where they have plenty of dollars.

Yours, etc.,

HORACE J. YOUNG.

15, Lansdowne House,
Manchester, 20.

House Organs

Philips Technical Review, Vol. 9, No. 6, published by Philips Electrical, Limited, Century House, Shaftesbury Avenue, London, W.C.2, contains a short illustrated article on the Electron Microscope, which this firm has developed. There are about five other articles dealing with electrical matters.

Albion Works Bulletin. Issued by John Harper & Company, Limited, and John Harper (Meehanite), Limited, Albion Works, Willenhall, Staffs.

This issue records a distinct improvement in attendance, absenteeism being reduced from 6.78 per cent. to 4.66. In one shop the percentage was down to 3.286. There is recorded the staging of the British Typewriter Exhibition, which has been commented upon editorially in the JOURNAL. Notes on their activities and a message from Mr. J. G. Pearce, director of the British Cast Iron Research Association, complete a very interesting issue.

Publications Received

Steel Tubes for Structural Work. Published by Tubewrights, Limited, Brook House, Upper Brook Street, London, W.1.

This 18-page booklet, now in its second edition, prints specifications and gives data germane to the subject matter. The bulk of the pamphlet is taken up with tubular matter, but it is supplemented by a very useful monogram for the calculation of the crippling stresses of struts. Copies can be secured on application to Tubewrights, Limited.

Technical Report for 1938. Published by the British Engine Boiler & Electrical Insurance Company, Limited, 24, Fennel Street, Manchester, 4.

The reviewer has long been familiar with this publication, but there is a difference between the 1948 Report and those of 20 years ago, inasmuch that to-day there are no accounts of the failure of iron castings. However, there are one or two happenings of interest to founders of high-duty iron. Amongst these are a failure of a crankshaft and a broken column of a baling press. In the experimental section, there is a long article on the "Interpretation of Notched-bar Tests." Included amongst these is work done on a series of cast irons. A feature of the Report is the excellence of the illustrations, of which there are no fewer than 195. Recipients of this Report can indeed count themselves fortunate.

Argentina—Economic and Commercial Conditions in the Argentine Republic. By J. G. Lomax, C.M.G. Published by H.M. Stationery Office, York House, Kingsway, London, W.C.2. Price 2s. 6d. net.

It is pleasing to see the re-starting of the service, by which the British commercial officers in the various embassies, through periodic reports, outline the economic conditions in the country to which they are attached. This service was much appreciated before the war, as it gave the merchant and manufacturer indications as to the needs, the competition, and the facilities for meeting, through private enterprise, current overseas demands. In this Report, dated October, 1947, there is shown to be a heavy demand for cast-iron pipes and cheap-grade cutlery. A feature of major interest is the gap, still unfulfilled, for goods which used to be supplied by Germany and Japan. The reviewer is of opinion that all the technicians who visited Germany under the auspices of the B.I.O.S. should have been armed with a set of these pre-war reports. They would then have been in a better position to correlate technology and commerce to the lasting benefit of this country.

It is a pity that no reference is made to the foundry industry of Argentina. It must be of some importance to service the not inconsiderable manufacturing industries—agriculture, meat-packing and textiles—of the country.

British Blast Furnaces in the March Quarter, 1948

These tables are published through the courtesy of the British Iron and Steel Federation.

Derby, Leicester, Notts, Northants and Essex.

Name of firm.	In blast April 3, 1948, making:—				Weekly average in blast.		Total built.	Furnaces relining.
	Hematite.	Forge and foundry.	Basic.	Total.	March, 1948, quarter.	Dec., 1947, quarter.		
Clay Cross	—	1	—	1	1	1	2	—
Ford Motor	—	1	—	1	1	1	1	—
Kettering Coal & Iron	—	1	—	1	1	1	2	—
New Cransley Iron & Steel	—	1	—	1	1	1	2	1
Renishaw Iron	—	2	—	2	2	2	2	—
Sheepbridge Coal & Iron	—	2	—	2	2	2	2	—
Stanton Ironworks: Holwell	—	3	—	3	3	3	5	1
Stanton-by-Dale	—	5	—	5	4·9	4	5	—
Staveley Coal & Iron	—	3	1	4	4	3·3	4	—
Stewarts and Lloyds: Corby	—	—	3	3	3·5	4	4	1
Wellingboro' Iron	—	—	2	2	2	2	3	1
Total	—	19	6	25	25.4	24.3	32	4

Lancashire (excl. N.-W. Coast), Denbigh, Flint and Cheshire.

Brymbo Steel	—	—	1	1	1	1	1	—
Darwen & Mostyn	—	—	—	1*	1	1	1	—
Lancashire Steel Corp'n.	—	—	2	3†	3	2.7	4	1
Total	—	—	3	5	5	4.7	6	1

* Producing ferro-manganese. † Includes one producing ferro-manganese.

North-West Coast.

Barrow Hematite	2	—	—	2	2	2	4	1
Charcoal Iron	—	1	—	1	1	1	1	—
Millom & Askam	2	—	—	2	2	2	3	1
Workington Iron & Steel	2	—	—	2	2	2	3	1
Total	6	1	—	7	7	7	11	3

Lincolnshire.

Appleby-Frodingham	—	—	9	9	8.5	7.9	9	—
Lysaght, J.: Scunthorpe	—	—	3	3	3·2	3	4	1
Thomas, R., & Baldwins: Redbourn	—	—	2	2	2	2.1	2	—
Total	—	—	14	14	13.7	13	15	1

North-East Coast.

Cargo Fleet Iron	—	—	2	2	2.2	2	3	1
Consett Iron	1	—	1	2	2	2	2	—
Dorman, Long: Acklam	—	—	3	3	3	3	4	1
Redcar	—	—	2	2	2	2	2	—
Cleveland	—	—	4	4	4	4	5	—
Bessemer	—	—	3	3	2.5	2	3	—
South Bank	—	—	—	2*	2	2	4	1
Grangetown	—	—	—	—	—	—	2	—
Gjers, Mills & Co.	2	—	—	2	2	2	5	—
Pease & Partners	—	—	—	2	2	2	3	1
Skinningrove Iron	—	—	2	2	2	2	2	—
South Durham Steel & Iron	—	—	2	2	2	2	3	—
Total	5	—	19	26	25.7	25	38	4

* Producing ferro-manganese.

Scotland.

Bairds & Scottish Steel: Gartsherrie	1	1	1	3	3.2	4	5	1
Carron	—	1	—	1	1	1	4	1
Colvilles	—	—	3	3	2.0	2	3	—
Dixon's	—	2	—	2	2	1.5	6	1
Total	1	4	4	9	9.1	8.5	18	3

Electrical Plant Output

Confidence that the industry can achieve its 1948 target provided that the necessary quantities of material and man-hours of labour are forthcoming, and that the established productive balance of the industry which had been a major factor in making possible its achievement is not seriously disturbed, is expressed by the British Electrical and Allied Manufacturers' Association in its annual report. It is pointed out that Government controls have in many instances made it difficult to retain the necessary quantity production for economic manufacture. As far as generating plant and equipment are concerned, the report states, owing to shortages of labour, materials and components, production facilities are not being used to their full capacity, but everything possible is being done to increase productivity.

Oversea Scientific Relations Committee

Acting on the advice of the Advisory Council on Scientific Policy, the Lord President of the Council has approved the establishment of an inter-departmental committee on oversea scientific relations. The chairman is Sir Edward Appleton, F.R.S., and the committee will include the representatives of Government departments, the foreign secretary of the Royal Society, representatives of the British Council and of the Conference of Research Associations, and two university scientists.

Festival of Britain 1951

The formation of the Council which will supervise the Festival of Britain 1951 has been announced by Mr. Herbert Morrison, Lord President of the Council. As previously announced, the honorary chairman of the Council will be General Lord Ismay. The Council will also include:—

Sir Frederick Bain, president of the F.B.I.; the Earl of Crawford and Balcarres, vice-chairman of the Lancashire Steel Corporation, Limited, chairman of the Wigan Coal Corporation, Limited, and the Wigan Coal & Iron Company, Limited, and a director of other companies; Miss Florence Hancock, chairman of the T.U.C.; Sir Robert Robinson, the eminent scientist; Col. Sir Frederick Stewart, chairman of the Thermotank Engineering Company, Limited, Thermotank, Limited, Kelvin, Bottomley & Baird, Limited, deputy-chairman of Brown Bros. & Company, Limited, and a director of other companies; Sir Patrick Abercrombie; Mr. Will Arthur; Sir Alan Barlow; Mr. R. A. Butler; Sir Kenneth Clark; Mr. Noel Coward; Dr. R. S. Edwards; Mr. T. S. Eliot; Mr. Walter Elliot; Mr. L. K. Elmhirst; Sir Henry French; Lady Megan Lloyd George; Mr. John Gielgud; Sir William Haley; Sir Alan Herbert; Miss Margaret Herbison, M.P.; Sir David Keir; Sir Harry Lindsay; Mr. Kenneth Lindsay; Mr. H. V. Lobb; Sir Ernest Pooley; Sir Malcolm Sargent; Mr. J. Westwood, M.P.; Sir Wynn Wheldon, and Mr. John Wilmot, M.P.

British Blast Furnaces in the March Quarter, 1948—*cont.*

Staffordshire, Shropshire, Worcestershire and Warwickshire.

Name of firm.	In blast April 3, 1948, making:— Hematite.	Forge and foundry.	Basic.	Total.	Weekly average in blast. March, 1948, quarter.	Dec., 1947, quarter.	Total built.	Furnaces relining.
Golden Irondale	—	1	—	1	1	1	2	1
Grazebrook Cold Blast	—	—	—	—	—	—	2	—
Lilleshall	—	1	—	1	1	1	2	1
Round Oak Steel Works	—	1*	—	1	1	1	3	—
Shelton Steel & Iron	—	—	3	3	3	2.1	3	—
Stewarts and Lloyds: Bilston	—	—	2	2	2	2	3	—
Thomas, G. & R.	—	—	—	—	—	—	2	—
Total	—	3	5	8	8	7.1	17	2

* Cold-blast pig-iron.

South Wales and Monmouthshire.

Guest, Keen, Baldwins: Briton Ferry	—	—	—	—	—	—	1	—
Cardiff	1	—	2	3	3	2.9	4	1
Steel Co. of Wales: Margam	—	—	2	2	2	2	2	—
Thomas, R., & Baldwins: Ebbw Vale	—	—	2	2	2	2	3	1
Total	1	—	6	7	7	6.9	10	2

Sheffield.

Park Gate Iron & Steel	—	—	1	1	1	1	2	—
GRAND TOTAL	13	27	58	102	101.9	97.5	149	20

* Includes four making ferro-alloys.

Number of Furnaces in Blast on April 3, 1948

District.	Weekly average in blast, March quarter.	Total in blast, April 3, 1948.	In blast April 3, making:— Hematite.	Forge and foundry.	Basic.	Ferro-alloys.
Derby, Leics., Notts, Northants and Essex	25.4	25	—	19	6	—
Lancs. (excl. N.-W. Coast), Denbigh, Flint and Ches.	5	5	—	—	3	2
Lincolnshire	13.7	14	—	—	14	—
North-East Coast	25.7	26	5	—	19	2
Scotland	9.1	9	1	4	4	—
Staffs., Shrops., Worcs. and Warwick	8	8	—	3	5	—
S. Wales and Monmouth	7	7	1	—	6	—
Sheffield	1	1	—	—	1	—
North-West Coast	7	7	6	1	—	—
Total	101.9	102	13	27	58	4

Weekly Average Number of Furnaces in Blast during the Previous Six Quarters

District.	1947. Dec.	Sept.	June.	March.	1946. Dec.	Sept.
Derby, Leics., Notts., Northants and Essex	24·3	25.8	23.6	24.7	25.8	23.5
Lancs. (excl. N.-W. Coast), Denbigh, Flint and Ches.	4.7	3.9	4	3.9	3.9	4
Lincolnshire	13	11.4	10.7	11.6	11.8	13
North-East Coast	25	23.7	23.2	25.5	26	26
Scotland	8.5	8	8	10.2	10.2	10
Staffs., Shrops., Worcs. and Warwick	7.1	6.2	4.4	4.2	5.8	7.8
S. Wales and Monmouth	6.9	6.9	6.9	6.8	6.9	6.6
Sheffield	1	1	1.8	1	1	1
North-West Coast	7	6.3	6.4	6.8	6.8	5.8
Total	97.5	93.2	89	94.7	98.2	97.7

The following companies have furnaces in course of construction:—Darwen & Mostyn, 1; Lancashire Steel Corporation, 1; Steel Co. of Wales, 1.

Parliamentary

Minister's Statement on Coal/Oil Conversion

Called upon to make a statement on the coal/oil conversion programme, the MINISTER OF FUEL AND POWER said that the House would recall that the coal/oil conversion programme was started in the spring of 1946, at a time when our coal stocks were shrinking and there was plenty of fuel oil. By June, 1947, however, the oil supply position had changed radically and it was decided that no more conversion schemes could be authorised. By December, 1947, largely owing to the astonishing increase in American consumption, the world shortage had become more acute and it became necessary to defer the completion of unfinished schemes authorised earlier in the year. Since then, there had been little improvement, while the closing of the Haifa refinery had created fresh difficulties. Accordingly, it would not be possible at present for all the postponed schemes to come into operation and in the majority of cases, the firms concerned must continue to burn coal, probably for some considerable time to come. The only exceptions to this would be schemes of conversion which had exceptional economic merit, *e.g.*, in certain cases of steel, glass and pottery production, where the actual process of converting to oil was nearly completed. The firms concerned would be notified shortly.

MR. ERROLL asked if the Minister could give a guarantee that existing consumers of fuel oil would get their full supplies.

MR. GAITSKELL said he thought that we could take it that there would be sufficient oil for those firms which had already converted; it was because they wanted them to have enough oil that they had deferred the conversion of others.

"Will the Minister bear in mind that many of these industrial firms changed over to oil from coal at the Government's request, and will he see that those firms that carried out the Government's policy will not be put to any financial loss in the matter?" asked MR. ODEY.

MR. GAITSKELL said that they could not admit any claims for compensation of that kind. The process of conversion was a voluntary one, although he agreed that the Government gave it encouragement.

The Government was attacked in the Commons on May 11 by MR. R. S. HUDSON for its coal-to-oil conversion policy, which had, he said, left many firms in the position of having to reconvert back to coal, thus adding to their costs of production. The situation was now that some firms had installed their new firing appliances, but had no fuel; others could get fuel; some were still going ahead with conversion, others were reconverting. No-one knew Government policy. He declared that in oil and oil products the Government's record was one of failure. Mr. Gaitskell had inherited "a mess."

MR. ALFRED ROBENS, Parliamentary Secretary to the Ministry of Supply, in his reply, said that the world demand could only be satisfied if British oil companies increased production. Steel production had been running at a very high rate, but steel for tankers and for the oil programme must be considered along with all the other uses for steel. He declared, on coal/oil conversion, that at the time of the conversion programme, the situation was very grave. We had a surplus of fuel oil and there was a grave shortage of coal. If the Government had not encouraged it, industrialists would have been driven to conversion, but it would have been done "chaotically." So far, 1,548 conversions had been completed which would use a total of 2,540,000 tons of oil a year; other conversions had been authorised in 291 cases which would use 250,000 tons a year. They proposed "shortly" to authorise a further group of 120 to convert. They would require another 340,000 tons a year. The balance of deferred conversions amounted to 435 cases, with an estimated consumption of 940,000 tons.

He agreed that inconvenience had been caused to firms who had gone so far with their schemes. "I don't want it to happen. As oil comes through we shall proceed to authorise in accordance with a proper scheme of priority on the extent to which conversion has been made and the importance of the industry."

New Steel Output Record in April

Success of Home Scrap Drive

In each successive month of this year a new record rate of steel production has been established. Output in April was at an annual rate of 15,283,000 tons; this compares with an average rate over the first four months of the year of 15,016,000 tons. The rate of steel production in April was nearly 3,000,000 tons more than in the corresponding month of last year, when the fuel crisis affected operations.

The continued success of the home scrap drive is reflected in the latest steel output figures and the British Iron and Steel Federation points out that the record rate of home scrap collection has at last checked the fall in stocks of scrap and pig-iron.

Pig-iron production also improved, reaching an annual rate of 9,433,000 tons in April, compared with 9,303,000 tons in March and only 7,238,000 tons a year ago. The higher production reflects the benefit being secured from the new blast furnaces, two of which have recently established European output records.

	Pig-iron.		Steel ingots and castings.	
	Weekly average.	Annual rate.	Weekly average.	Annual rate.
	Tons.	Tons.	Tons.	Tons.
1948—January ..	167,800	8,726,000	280,600	14,589,000
February ..	176,300	9,169,000	289,400	15,049,000
March ..	178,900	9,303,000	290,700	15,117,000
April	181,400	9,433,000	293,900	15,283,000
1947—January ..	150,100	7,806,000	239,800	12,470,000
February ..	126,200	6,560,000	206,300	10,726,000
March ..	123,100	6,400,000	196,000	10,190,000
April	139,200	7,238,000	236,400	12,294,000

A FIRE BROKE OUT in the works of E. S. Lord, Limited, makers of core oils, of Rochester. The offices, however, were saved and arrangements have been made to carry on the business as usual.

Company News

(Figures for previous year in brackets.)

Tecalemit—Interim dividend of 6% (same).

Mason & Burns—Dividend of 10% (same).

G. Beaton & Son—Dividend of 10% (same).

Spear & Jackson—Dividend of 15% (same).

Betts & Company—Interim dividend of 5% (2½%).

Cannon Iron Foundries—Interim dividend of 5% (same).

Range Boilers—Final dividend of 15%, making 20% (same).

Hopkinsons—Final dividend of 15%, making 22½% (same).

Platt Bros. & Company (Holdings)—Dividend of 10% (same).

Hoffman Manufacturing Company—Dividend of 7½%, tax free (same).

Peglers—Dividend of 2s. 3d. on the "A" and "B" ordinary shares (same).

International Diatomite Company—Final dividend of 12½% (nil), making 20% (nil).

Glenfield & Kennedy—Final dividend of 5% and cash bonus of 10%, making 20% (same).

Beyer, Peacock & Company—Dividend of 5% (same) and bonus of 1% (nil) on increased capital.

John Thompson (formerly John Thompson Engineering Company)—Final dividend of 12½% and bonus of 5%, making 22½% (same).

Quicktho (1928)—Net profit to January 31, after tax, £5,520 (net loss of £3,192); dividend of 4⅛% (nil); credit forward, £1,309 (debit £1,347).

Wilkes Berger Engineering Company—Dividend of 20% (15% and bonus of 5%) and cash distribution out of profits of 5% (nil) not subject to tax.

Imperial Smelting Corporation—Interim dividend of 6% (5% and bonus of 1%). It is not the directors' intention to recommend a further dividend.

John Rigby & Sons—Interim dividend of 5% (2½%). The directors state that the higher payment should not be regarded as an indication of an increased distribution for the year.

North Lonsdale Iron & Steel Company—Trading profit for 1947, £18,923; profit on realisation of railway stocks, £3,603; directors' fees written back, £3,125; to reserve for taxation, £9,000; net profit, £16,651; forward, £30,012 (£13,361).

George Wostenholm & Son—Trading profit for 1947, £6,988 (£7,099); to directors' fees, £500 (same); taxation, £3,276 (£1,499); depreciation, £500 (same); to reserve, nil (£1,498); net profit, £2,712 (£3,102); dividend of 10% (same).

Thorn & Hoddle—Net profit for the year ended September 30, 1947, after providing for depreciation, £4,489 (£3,468); to employees' benevolent reserve, £325 (£250); taxation, £2,064 (£1,674); dividend of 10% (same); forward, £6,857 (£5,702).

Projectile & Engineering Company—Trading profit for 1947, £58,261 (£24,545); sundry receipts, £3,194 (£4,312); capital profits, £2,076 (nil); to trustees' fees, £20 (same); directors' fees, £2,004 (£2,225); legal and professional charges, £2,168 (£2,614); debenture interest, £2,772 (same); depreciation, £32,626 (£30,603); credit balance, £23,941 (debit £9,377); to taxation, £4,529 (£4,423); dividend of 10% (nil); forward, £44,020 (£41,108).

B. O. Morris—Trading profit to January 31, £94,028; rents, etc., £1,596; less interest on bank overdraft, £497; bad debts reserve, £3,000; depreciation, £3,525; directors' fees, £600; managing directors' remuneration, £3,000; net profit, £85,002; to tax, £45,729; general reserve, £20,000; plant replacement reserve, £2,500; preference dividend, £2,062; final ordinary dividend of 30%, making 50%; forward, £1,131. The company was made public in June, 1947.

Telegraph Condenser Company—Trading profit for 1947, after E.P.T., profits tax and contingencies, £191,724 (£98,708); investment interest, £737 (£169); tax certificates interest, £140 (£199); to depreciation, £17,783 (£12,281); directors' fees, £2,300 (same); net profit, £172,518 (£84,495); to tax, £110,000 (£43,000); final dividend of 10%, making 15% (10% and bonus of 5%); supplementary pensions, £25,000 (nil); general reserve, £20,000 (£25,000); forward, £41,085 (£40,232).

William Beardmore & Company—Trading profit for 1947, after depreciation and tax, £182,538 (£186,920); other income, £10,877 (£9,430); to debenture interest, £26,080 (same); directors' fees, £3,711 (£3,917); net profit, £163,624 (£166,353); final dividend of 8½% (9½%), making 12½% (same) and bonus of 5% (same) forward, £406,882 (£363,433). A special distribution of 5s. per £1 unit out of profits arising from the realisation of certain capital assets, not subject to tax, was paid in November last.

Babcock & Wilcox—Net trading profit for 1947, £1,242,757 (£1,098,183); dividends on trade investments, £51,606 (£59,879); interest on investments, £48,117 (£50,380); miscellaneous income, £10,332 (£21,577); to staff pension funds, £59,042 (£53,100); deferred repairs, £34,435 (£160,793); profits tax, £135,000 (£30,000); net profit, £825,755 (£766,109); to income tax, £364,741 (£299,795); general reserve, £100,000 (nil); obsolescence, nil (£100,000); dividend of 15% (same); forward, £161,909 (£163,907).

Johnson & Phillips—Profit for 1947, after charging £67,497 (£52,910) for maintenance of buildings, etc., and £100,000 (nil) to special stock reserve, £408,727 (£373,296); to directors' fees, £3,500 (£3,250); audit fees, £735 (£630); loan interest, £19,354 (£29,684); depreciation, £43,087 (£42,184); pensions, etc., £17,971 (£16,271); tax, £200,000 (£120,000); capital issue expenses, £461 (£1,456); net profit, £123,619 (£159,820); to research and development, £30,000 (£20,000); special contingencies, nil (£50,000); final dividend of 7½% on larger capital

(7½%), making 15% (same); forward, £133,988 (£128,396).

Guest Keen Baldwins Iron & Steel Company—Trading balance for 1947, £1,352,121 (£1,577,824); dividend from a subsidiary company, less provision for loss in a subsidiary company, £20,385 (£24,314); sundry interest and miscellaneous income, £33,680 (£7,960); to depreciation, £375,000 (same); additional depreciation, nil (£90,000); taxation, £542,158 (£700,000); debenture interest, £80,376 (£81,612); debenture stock redemption, £32,124 (£30,888); directors' fees, £3,664 (£6,167); profit, £372,864 (£326,431); to interest on 5% income notes, £23,686 (£24,289); income notes redemption, £12,675 (£12,071); dividend of 10% (same); forward, £291,347 (£199,927).

Lancashire Steel Corporation—Group earnings for the year ended December 31, 1947, £1,562,468, less income tax £515,000, profits tax £180,000, leaving £867,468 (against £960,486 for 14 months to December 31, 1946); to directors' fees, £900 (£1,050); depreciation, £310,000 (£375,000); deferred repairs, nil (£75,000); net profit, £556,568 (£509,436); to general reserve, £150,000 (£200,000); reserve for increased cost plant and buildings, £100,000 (nil); staff superannuation, £30,605 (£6,541); preference dividends, £62,653 (£73,111); "A" and "B" ordinary dividend at the rate of 8% per annum (same), £152,339 (£117,728); forward, £201,247 (£140,277).

John Summers & Sons—Combined profit and loss account for 1947 shows:—Profit, £2,265,375 (£1,650,769); gross income from investments, etc., £73,005 (£44,680); to depreciation, £444,433 (£382,247); directors' fees, £3,526 (£3,651); net profit, before taxation, £1,890.421 (£1,309.551); provision for taxation, £1,236,175 (£722,225); to shares held outside group, £2,207 (£362); surplus for year applicable to group holdings, £652.039 (£586,964). Appropriations.—John Summers & Sons, Limited: To general reserve, £205,000 (£200,000); contingencies reserve, £50,000 (£100,000); preference dividend, £71,193 (£58,520); ordinary dividend of 8½% (same); unappropriated, £1.016,705 (£993,741).

Stewarts and Lloyds—Trading profit for 1947, £3,080,241 (£3,184,075); profit from earlier years, nil (£160,563); income from subsidiary companies, £1,250,465 (£1,055,083); income from trade investments, £285,919 (£228,131); interest on tax-reserve certificates, £22,887 (£23,407); to directors' fees, £15,000 (same); directors' other remuneration, £44,755 (£46,165); employees' benefit fund, £70,000 (same); staff pension fund, £66,217 (£60,924); debenture redemption, £39,814 (£38,268); debenture interest, £87,686 (£89,232); depreciation, £590,378 (£618,488); deferred repairs, nil (£590,000); E.P.T., nil (£300,000); profits tax, £450,000 (nil); income tax, £1,380,000 (£1,425,000); net profit, £1,895,662 (£1,398,182); tax reserves no longer required, £500,000 (nil); to obsolescence, £500,000 (same); stock reserve, £495.000 (nil); general reserve, £735.000 (nil); preference dividends, £131,136 (same); dividend of 12½% on the deferred stock and at the appropriate rate on the liaison deferred shares (same); forward, £444,278 (£514,595).

Personal

MR. R. BEVERLEY has resigned from the board of the Metal Box Company, Limited.

MR. HENRY E. JONES, formerly secretary of the British Engineers' Association, has been appointed advertising director to British Industrial Publicity Overseas, Limited.

SIR PATRICK HAMILTON has been appointed chairman of Henry Simon, Limited, coal handling plant manufacturers, etc., of Stockport, in succession to MR. CECIL BENTHAM.

MR. J. R. PARK, at present director of research and development, has been appointed to the board of the British Oxygen Company, Limited, as assistant managing director.

MR. G. L. ALLEN has been appointed secretary of the North-Western Region of the Federation of British Industries in place of MR. J. J. BUTLER, who will retire at the end of May.

MR. FREDERICK B. MILLS, a director of Hopkinsons, Limited, Huddersfield, has been elected president of the Leeds Association of Engineers. He is the first honorary member to be elected to that position.

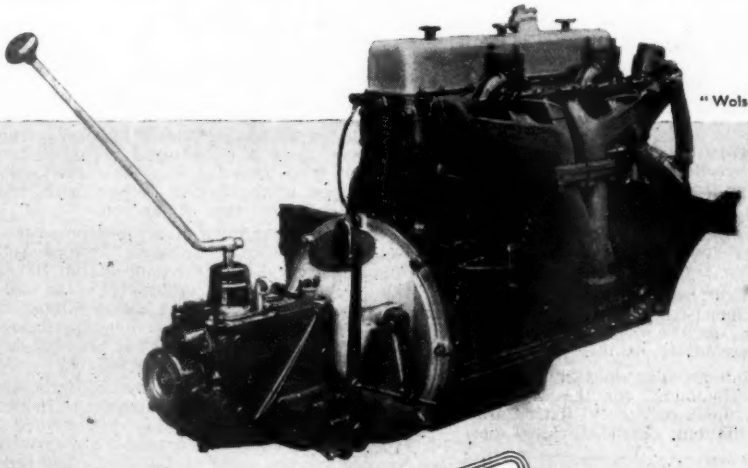
THE HON. R. A. BALFOUR, a director of Arthur Balfour & Company, Limited, steel manufacturers, of Sheffield, and a former Master Cutler, has returned from a visit to Australia, during which he made four broadcasts.

MR. H. CUNNINGHAM, formerly commercial manager of the Redheugh Iron & Steel Company (1936), Limited, has been appointed general manager of A. C. Riley & Son, Limited, boilermakers, etc., of Batley, Yorks.

MR. T. H. SUMMERSON, chairman and joint managing director of Thomas Summerson & Sons, Limited, and of Summerson's Foundries, Limited, Darlington, has been elected president of the Tees-side Chamber of Commerce.

MR. H. H. CUNDELL has been appointed sales manager of the British Aluminium Company, Limited. MR. A. W. LANGHAM will continue to be responsible for the sales planning department, MR. E. E. SPILLETT has been appointed development manager in place of MR. CUNDELL, and MR. P. S. W. SWABEY has been appointed assistant development manager in place of Mr. Spillett.

MR. J. B. WOODESON (Clarke, Chapman & Company, Limited), MR. D. G. BROWN (Redheugh Iron & Steel Company (1936), Limited), MR. J. RAMSAY GEBBIE (William Doxford & Sons, Limited), MR. T. H. SUMMERSON (Thomas Summerson & Sons, Limited), and COL. E. SMITH (Smith's Dock Company, Limited) have been nominated by the Newcastle-upon-Tyne and Gateshead, Sunderland and Tees-side Chambers of Commerce, in conjunction with the F.B.I., to serve on the Northern Area Consultative Committee of the British Electricity Authority.



"Wolseley 14 h.p. Engine."

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Using

STANTON-DALE

REFINED PIG IRON

USED AND RECOMMENDED
FOR ALL HIGH-DUTY
ENGINEERING CASTINGS

THE STANTON IRONWORKS COMPANY LIMITED, Nr. NOTTINGHAM

News in Brief

MAGNESIUM METAL & ALLOYS, LIMITED, is being wound up voluntarily. Mr. L. L. Hawkes is the liquidator.

YEWCO (FOUNDRY), LIMITED, Eccleshill, Bradford, has changed its name to Yewco (Foundry & Engineering), Limited.

FURNESS SHIPBUILDING COMPANY, LIMITED, Haverton Hill-on-Tees, has received orders from Stockholm owners for two large tankers.

CONTRACTS TO the value of £105,000, for the construction of two carburetted water-gas plants, have been placed with the Power-Gas Corporation, Limited, Stockton-on-Tees.

WEARDALE LEAD COMPANY, LIMITED, plans to reopen the Wolf Cleugh mine, near Rookhope, Co. Durham. Other developments are also being considered which will cost several thousands of pounds.

THE FOLLOWING interim allocations of tin metal by the Combined Tin Committee for the first half of 1948, additional to those previously stated, are announced:—Austria, 300 tons; South Africa, 60 tons.

FORTY RIVET HEATERS employed by the Blyth Dry Docks & Shipbuilding Company, Limited, who stopped work over an Easter holiday pay grievance, returned to work on May 10. The strike caused 80 riveters, who refused to heat their own rivets, to be idle.

THE COMMISSIONERS OF CUSTOMS AND EXCISE emphasise that on draining boards which are not articles falling within Group 11(*n*) of the revised schedule of chargeable goods, the rate of tax is 33⅓ per cent. (Group 11(*a*)), and not 66⅔ per cent. (Group 11 (*b*) (i)).

A STRIKE OF 1,200 employees of Ambrose Shardlow & Company, Limited, manufacturers of drop forgings, crankshafts, etc., of Sheffield, has been called off, and the dispute has been placed in the hands of the union officials. The trouble arose over the dismissal of two men.

THE DIRECTORS of the Briton Ferry Steel Company, Limited, announce they would recommend that for the year ended April 3, 1948, the final dividend on ordinary shares should not, with the interim (5 per cent.) already paid, together exceed the total dividend for the previous year of 15 per cent.

IN A STATEMENT published with the accounts for 1947, Sir John Greenly, chairman of Babcock & Wilcox, Limited, describes the past year as a "period of marked success." The order-book had reached by the end of the year "very high proportions," indeed, "far higher than we have ever experienced in the past."

THE CONTRACT for a cargo liner of 8,700 tons dw. placed with the Burntisland Shipbuilding Company, Limited, by the A/S. Borgestad (Mr. Gunnar Knudsen), Borgestad, has been taken over by Van Nievelt, Goudriaan & Company's Stoomvaart Maatschappij N.V., Rotterdam. The vessel is to be fitted with a Doxford oil engine.

THE NETHAN IRON WORKS, Motherwell, of Frederick Braby & Company, Limited, is to be reopened for the purpose of receiving and storing redundant materials for ultimate manipulation at the company's Glasgow sheet rolling mills. The company states that the prevailing shortage of semis precludes the resumption of production of sectional material.

HEAD, WRIGHTSON & COMPANY, LIMITED, Thornaby-on-Tees, has been appointed consultant engineers for the design of two new blast furnaces to be built by Dorman, Long & Company, Limited, at its Cleveland works. It is intended that these new units will be the biggest in the British Empire, each with a daily capacity of 1,000 tons of pig-iron.

PRELIMINARY DETAILS of a gas-turbine car engine developed by the Rover Company, Limited, Solihull, Birmingham, reveal that it develops about 100 brake h.p., equivalent to a R.A.C. rating of 25 h.p., and could be fitted to existing chassis and bodies without their being modified, only different engine mountings being required. It is understood that the unit has been bench tested for many hours without any major failure.

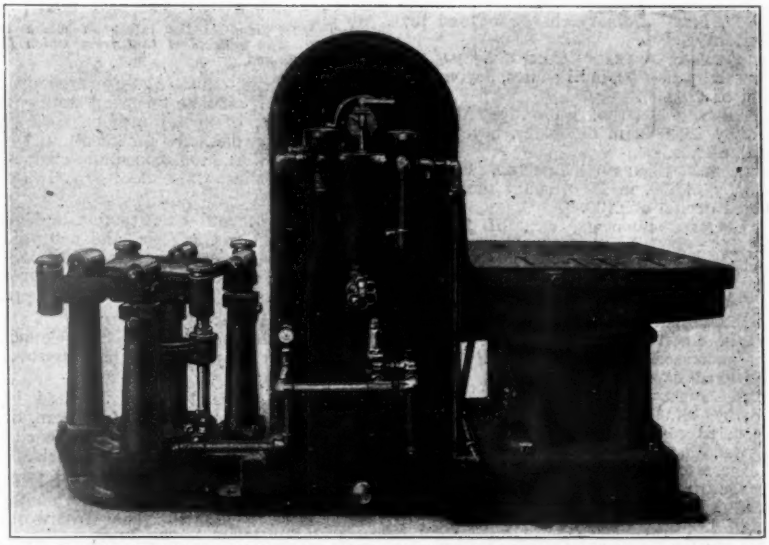
IN FACE OF strong competition, particularly from Switzerland and the United States, the Harland Engineering Company, Limited, Alloa, has secured an order from the Argentine Government for waterworks pumping plant to the value of £200,000. The order covers six electrically-driven borehole-type pumps with a total capacity of 5,500,000 galls. an hour driven by motors of 1,300 h.p., also of Harland manufacture.

AT A PUBLIC MEETING at Middlesbrough, concerning the application of the North Riding County Council to construct a new 120-ft. wide highway, it was stated that the new road was made necessary by the big new developments on the south bank of the Tees—the new Tees Conservancy docks, the rolling mills of Dorman, Long & Company, Limited, and the new £17,000,000 factory at Wilton, of Imperial Chemical Industries, Limited.

ELEVEN MEMBERS of one family have between them achieved a total of nearly 200 years' service with George Cohen, Sons & Company, Limited, metal merchants, engineers, etc., of Hammersmith, London, W.6. One of them, Mr. R. F. Thomas, started work with the company in 1886 as a metal house foreman and continued in its employ for 52 years. His brother, Mr. C. F. Thomas, an inspector, and his son, Mr. H. C. Thomas, a representative, are still with the firm after 39 and 30 years' service respectively.

IN HIS PRESIDENTIAL ADDRESS at the annual conference of the Association of Scientific Workers, in London, on May 8. Prof. J. D. Bernal, F.R.S., attacked what he described as the Government's "hand-to-mouth policy of cutting down capital expenditure, weakening the possibilities of development and hence undermining the hopes of ultimate recovery." He denounced the attempt to balance the external trade of the country, particularly in dollars, "by restricting capital expenditure in favour of the manufacture of consumption goods for export." He denied that the crisis could be overcome "merely by financial rearrangements or by appeals for harder work."

MACNAB
MOULDING MACHINES



LATEST ENCLOSED SAND PROTECTED MODEL
"SHOCKLESS" JOLT RAM ROLLOVER PATTERN DRAW MACHINE

MACNAB Moulding Machines mean CLEAN, ACCURATE AND WELL FINISHED moulds.

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MACNAB and Company Limited
14, ST. JOHN'S ROAD HARROW
(TEMPORARY OFFICES)
Telephone: HARROW 4578

Increases of Capital

Details of increased capital have been announced by the following companies:—

SIGMUND PUMPS, LIMITED, Gateshead, increased by £10,000, in £1 ordinary shares, beyond the registered capital of £150,000.

HARRINGTON'S (WOLVERHAMPTON), LIMITED, engineers, etc., increased by £5,000, in £1 shares, beyond the registered capital of £5,000.

WEST LONDON IRON & WIRE WORKS, LIMITED, London, W.3, increased by £3,000, in £1 shares, beyond the registered capital of £2,000.

BRITANNIA SMELTING WORKS (LONDON), LIMITED, increased by £3,000, in £1 ordinary shares, beyond the registered capital of £2,000.

KRESTA FOUNDRY & ENGINEERING COMPANY, LIMITED, Liverpool, increased by £30,000, in £1 shares, beyond the registered capital of £20,000.

MALDON IRONWORKS, LIMITED, Fullbridge, Maldon, Essex, increased by £35,000, in £1 shares, beyond the registered capital of £15,000.

GROOVED FIREBARS COMPANY, LIMITED, London, S.W.1, increased by £1,900, in £1 ordinary shares, beyond the registered capital of £100.

COMPRONEX, LIMITED, engineers, etc., of London, E.C.4, increased by £1,000, in £1 ordinary shares, beyond the registered capital of £1,000.

NON-FERROUS FOUNDERS, LIMITED, Lower Morden, Surrey, increased by £1,000, in £1 ordinary shares, beyond the registered capital of £4,000.

BROCK & NASH, LIMITED, metal workers, etc., of Bromley, Kent, increased by £4,500, in £1 shares, beyond the registered capital of £500.

T. D. TURNER, LIMITED, engineers, etc., of Macclesfield, increased by £4,000, in £1 ordinary shares, beyond the registered capital of £6,000.

W. H. SILVESTER, LIMITED, engineers, etc., of Neepsend, Sheffield, increased by £5,000, in £1 ordinary shares, beyond the registered capital of £10,000.

PHILIP MYBURGH, LIMITED, mechanical and electrical engineers, etc., of London, E.14, increased by £4,350 in £1 shares, beyond the registered capital of £150.

A.G.M. & COMPANY, LIMITED, manufacturers of machinery, etc., of London, W.C.1, increased by £2,500, in £1 shares, beyond the registered capital of £1,000.

RICHARD W. CARR & COMPANY, LIMITED, steel and tool manufacturers, etc., of Sheffield, increased by £20,000, in £1 shares, beyond the registered capital of £10,000.

W. A. BAKER & COMPANY, LIMITED, ironfounders, etc., of Courtybella, Newport, Mon, increased by £350,000, in £1 ordinary shares, beyond the registered capital of £150,000.

C.G.L. CONSULTING & EXPERIMENTAL ENGINEERS, LIMITED, Wheathampstead, Herts, increased by £1,000, in £1 ordinary shares, beyond the registered capital of £2,000.

FREEMAN, TAYLOR MACHINES, LIMITED, Leicester, increased by £6,000, in 5,000 preference (not redeemable) and 1,000 ordinary £1 shares, beyond the registered capital of £4,000.

HEAD, WRIGHTSON & COMPANY, LIMITED, Thornaby-on-Tees, increased by £290,000, in 4½ per cent. cumulative preference shares of £1 each, beyond the registered capital of £710,000.

WILLIAM H. CAPPER & COMPANY, LIMITED, engineers and pipe-line specialists, etc., of Woolston, near Warrington, increased by £10,000, in £1 shares, beyond the registered capital of £20,000.

BRYMBO STEEL WORKS, LIMITED, Brymbo, near Wrexham, increased by £699,900, in £1 ordinary shares, beyond the registered capital of £100. Three of the five directors are also directors of Guest, Keen & Nettlefolds, Limited.

Contracts Open

Any date given is the latest on which tenders will be accepted. The address is that from which forms of tender may be obtained.

Bridge-Blean, June 23—Construction of approx. 9,800 yds. of concrete tube and stoneware pipe sewers and 180 yds. of spun-iron pipe sewers ranging from 12 in. to 7 in. dia., etc., for the Rural District Council. Mr. F. W. S. Stanton, consulting engineer, 5, Victoria Street, Westminster, London, S.W.1. (Fee £5, returnable.)

Cheadle, June 2—Construction and maintenance of approx. 7,225 yds. of 4-in. and 660 yds. of 3-in. dia. spun-iron pipes, etc., for the Rural District Council. Mr. J. W. Burton, engineer and surveyor, Council Offices, Cheadle, Staffs. (Fee £5 5s., returnable.)

Kidsgrove, June 3—Construction of spun-iron water mains, etc., for the Urban District Council. The Engineer and Surveyor, Town Hall, Kidsgrove. (Fee £5 5s., returnable.)

Mansfield, June 1—Supplying and laying approx. 3,210 yds. of 12-in. and 80 yds. of 9-in. bore spun cast-iron gas mains, for the Town Council. Mr. F. C. Sylvester, Lime Tree Place, Mansfield.

Pershore, June 2—Construction of 1,410 yds. of 3-in. dia. Class "B" metal-spun water mains, etc., for the Rural District Council. The Waterworks Superintendent, Council Offices, Pershore.

Recent Wills

SIMPKIN, J. W., of Doncaster, steel merchant	£9,978
CONN, SIDNEY, chief buyer of the Tees Side Bridge & Engineering Works, Limited	£1,410
TODD, A. J., a director of Taylor & Fraser, Limited, heating engineers, of Glasgow	£4,941
YOUNG, W. A., late of Babcock & Wilcox, Limited, boilermakers, etc., of Renfrew	£2,041
KITCHIN, WILLIAM, late of S. & J. Kitchin, Limited, matchet manufacturers, of Sheffield	£4,471
NEWTON, C. J., a director of C. J. Newton, Limited, steel stockholders, etc., of Warrington	£3,072
WHARTON, Miss A. E., formerly secretary of the Gosforth Foundry Company, Limited, Dronfield...	£3,579
WILLIAMS, GWILYM, formerly managing director of James & Company (Birmingham), Limited, manufacturers of centrifugal castings, etc.	£4,234
COOK, A. H., vice-chairman of William Cook & Sons (Sheffield), Limited, crucible-steel manufacturers, etc., and a director of William Cook & Sons (Glasgow), Limited, saw manufacturers ...	£8,865

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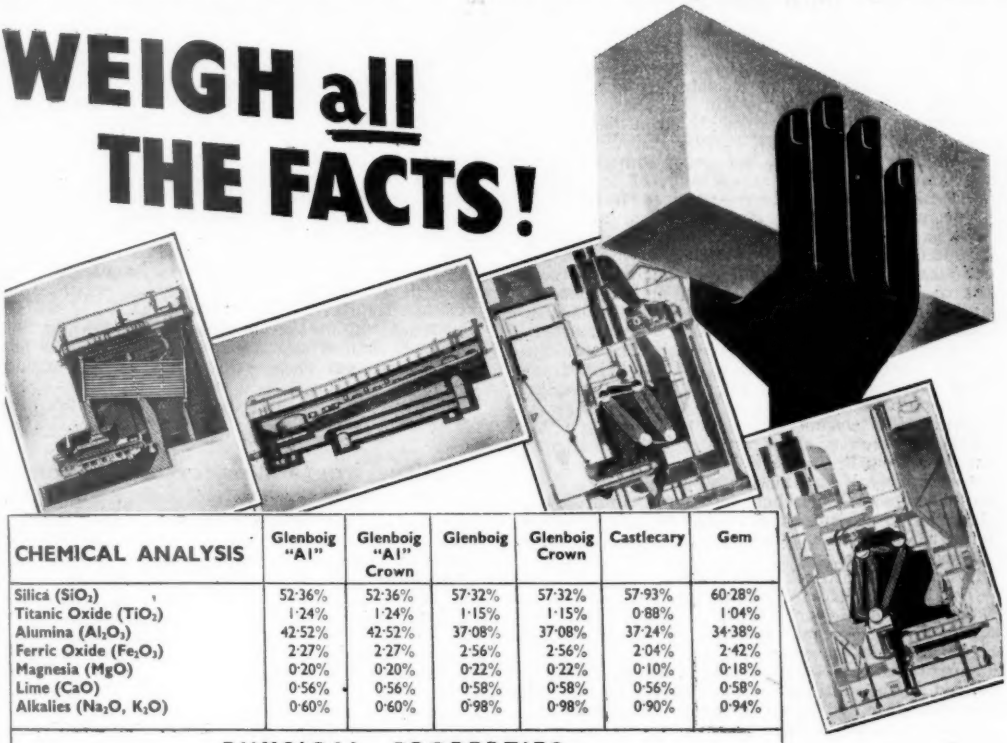

CHEMICAL ANALYSIS	Glenboig "AI"	Glenboig "AI" Crown	Glenboig	Glenboig Crown	Castlecary	Gem
Silica (SiO_2)	52·36%	52·36%	57·32%	57·32%	57·93%	60·28%
Titanic Oxide (TiO_2)	1·24%	1·24%	1·15%	1·15%	0·88%	1·04%
Alumina (Al_2O_3)	42·52%	42·52%	37·08%	37·08%	37·24%	34·38%
Ferric Oxide (Fe_2O_3)	2·27%	2·27%	2·56%	2·56%	2·04%	2·42%
Magnesia (MgO)	0·20%	0·20%	0·22%	0·22%	0·10%	0·18%
Lime (CaO)	0·56%	0·56%	0·58%	0·58%	0·56%	0·58%
Alkalies (Na_2O, K_2O)	0·60%	0·60%	0·98%	0·98%	0·90%	0·94%

PHYSICAL PROPERTIES						
Refractoriness	Seger Cone 34 (1750°C)	Seger Cone 34 (1750°C)	Seger Cone 32/33 (1720°C)	Seger Cone 32/33 (1720°C)	Seger Cone 32/33 (1720°C)	Seger Cone 31/32 (1700°C)
Refractoriness U/L of 2 kilos/sq. cm.	1630°C	1610°C	1610°C	1580°C	1600°C	1580°C
Refractoriness U/L of 50 lb./sq. in.	1580°C	1530°C	1530°C	1510°C	1520°C	1510°C
Thermal (Reversible) Expansion—mean co-efficient X 10^{-5}	0.568	0.522	0.584	0.540	0.562	0.623
Porosity—Total Percentage by Volume	18/20	24/26	16/20	24/25	16/20	16/20

GLENBOIG

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Raw Material Markets

Iron and Steel

Pig-iron production is now more commensurate with industrial requirements. Still further expansion may be possible later in the year when new blast furnaces, now in the course of construction, are due for completion, but more coke is still an urgent need and anxiety also persists regarding the maintenance of the supplies of imported ores. In this respect, relief will be afforded by the trade agreement with the Spanish Government, in which the exchange of Spanish ores for British manufactures has been negotiated.

Meanwhile, deliveries of pig-iron are on a more satisfactory scale and, although the immediate prospects of replenishing stocks may be poor, the steady reduction of pig-iron and scrap reserves has at last been arrested. With an abundance of orders in hand, foundries may now be able to increase their outputs and are hopeful that the year's target of 3,200,000 tons of iron castings will be reached.

The severely limited intake of semi-finished steel from overseas sources has emphasised the dependence of the re-rolling mills upon home supplies. This is a matter which has not escaped attention and, of late, there has been a slow but steady acceleration of deliveries from British steelworks. The re-rolling mills are reasonably, if not abundantly, provided with billets, slabs, and sheet bars, but their ready absorption of defectives, crops, etc., suggests that the position is still somewhat precarious. There is certainly a very extensive market for all classes of re-rolled products, especially strip and light steel sheets.

The heavy mills have extensive rolling programmes which leave little scope for the acceptance of further orders for this period. Shipbuilders would welcome bigger deliveries of plates, but there are many other important national industries whose claims cannot be ignored. The rail mills cannot keep pace with the extensive home and export demand, and collieries have placed substantial orders for rails, arches, props and roofing bars.

Non-ferrous Metals

Conditions in non-ferrous metals have been decidedly quiet, and it seems that during the summer trade is going to be rather below the average of recent months. There is no doubt that the enthusiasm for buying, which has been so much a feature of the post-war world, is on the wane, and if the non-ferrous metals industry has not yet reached the state of affairs now existing in the clothing industry and in other directions, there are indications that it is on the way towards it. It seems very probable that there is a stock-reduction programme in progress among the customers of the makers of non-ferrous metal semis, which may be carried to some length, for there is no gauging the extent of these trends once they start. The sentiment which for so long has prompted the acquisition and retention of stocks of all kinds is now giving place to a feeling of nervousness about the ultimate demand, which is prompting manufacturers and others to cut their holdings to the lowest possible limit. This process of stock elimination is likely to produce an appearance of reaction which is not quite in line with the facts of the situation. Scrap values have given way rather sharply, and the tendency is still towards a lower level, as merchants insist on pressing their wares on a somewhat unwilling market.

Although the reply given recently by the Minister of Supply on the subject of a possible re-opening of the market in non-ferrous metals was a somewhat uncompromising refusal in view of the shortage of supplies, it is generally accepted that there is no objection in principle to the re-establishment of the London Metal Exchange. It has been suggested that the prospects for trading on a re-opened market have been adversely affected because consumers now have contacts direct with producers and would, in due course, arrange contracts accordingly. This is a misconception of the situation, for, so far as copper and zinc at any rate are concerned, this set-up existed before the war and trading in futures was active enough then. The fact is, of course, that these two metals were not normally bought for consumption through the medium of the London market, but, nevertheless, there is still a need for hedging facilities.

British Firm to Manufacture Furnaces

It is announced that an agreement to manufacture under licence Lee Wilson radiant tube-fired furnaces has been negotiated between the Incandescent Heat Company, Limited, Smethwick, and Lee Wilson Inc., Cleveland, Ohio. It is hoped that the licence will eventually be extended to cover Europe. In return the American company will be permitted to manufacture the Smethwick firm's special furnaces ranging from an arc melting furnace of 30 tons of steel to a small one for hardening fish-hooks.

Labour Shortage in Limestone Industry

"Unless we get the help we need, we might have to face a crisis in our industry which would strike a heavy blow at the recovery of our country," said Mr. H. C. Anson, in his presidential address to the annual meeting of the Limestone Federation at Llandudno. He said that nearly 6,000 men were needed to replenish the labour force, but new blood was not entering the industry because of the break in careers of youths through conscription and because of the rural housing shortage.

AN AGREEMENT has been reached between the Clydesdale Steelworks of Stewarts and Lloyds, Limited, and Colvilles, Limited, under which Clydesdale Steelworks is to revert to making steel ingots, which will be transferred to Colvilles for the manufacture of steel commodities. At present Clydesdale is producing steel billets in excess of its requirements. This is reported to be the reason for the agreement, which will also ensure steadier work for Colvilles, Limited, which has had to close down furnaces due to lack of scrap.